

Remarks/Arguments:

Claims 1-25 are pending in the application. Claims 19-22 have been withdrawn from consideration. Claims 1 and 8 have been amended to add recitation of a structural feature that can provide automatic cycling of the gas valve of the controllable pulsating portion of the apparatus. Support for the amendment may be found throughout the application, for example at paragraphs [0012], [0033] and [0039].

Summary of Applicant's Invention

Applicant's invention solves certain problems created by the typical fluidized bed coater, namely that the relatively static nature of the powder in the bed results in mixing problems and temperature gradients, and thus uneven coating. Therefore, in addition to using a typical primary portion of gas to fluidize the powdered material, Applicant's invention adds a second gas portion that is cyclically pulsed and results in a cyclical variation in the fluidized powder and excellent homogenization of the fluidized powder. The second gas portion is capable of performing this pulsing action in an automatically self-cycling manner.

35 U.S.C. §102

Claims 1, 2, 6, 8-11 and 23-25 are rejected under 35 U.S.C. §102(b) as anticipated by US 5,766,557 ("Luy"). The Luy apparatus contains multiple gas sources to control valves and seals, but only a single gas source (29) for supplying fluidizing gas. The fluidizing gas enters the apparatus 1 at bottom wall part 6, flows up through container 3, and exits the apparatus at gas outlet 30. (See Fig. 1 and column 4, lines 61-67) However, gas source 29 is not equipped with a valve connected to a controller capable of effecting actuation between opened and closed positions in an automatically self-cycling manner to provide the cyclical pulses, as currently claimed.

There are no other gas sources that either directly or indirectly feed the fluidizing and processing space 28b. Rather, contrary to the examiner's assertion, the gas sources operating via valves 125 and fast-action vent valves 128 feed only the hollow seals 81, 87, 93 and 95 at connections 83, 89, 94 and 96, respectively. (See column 8 lines 7-17 and column 8 line 64 through column 9 line 3.) The purpose of the seals is to avoid the possibility of gaps, channels fissure, and crevices between various parts, such as wall parts 9, 10 and 11. (See column 2 line 65 through column 3 line 10) When pressure is released from the seals, it is released into the atmosphere. (See column 9, line 3) Therefore, regardless of whether valves 125 and 128 can or cannot be operated in a pulsating manner, all of the gas flow always goes only into the seals, ultimately to be vented to the atmosphere, but not into the plenum and not ultimately into the fluidized bed in the coating chamber. Thus, none of valves 125 and 128, in any combination, can provide either the presently claimed primary fluidizing portion or the controllable pulsating portion, since both of these portions must feed to the plenum that in turn feeds the coating chamber of the presently claimed apparatus.

Thus, the Luy reference fails to teach or suggest a gas portion that goes into the plenum and that includes a valve connected to a controller capable of effecting actuation between opened and closed positions in an automatically self-cycling manner to provide cyclical gas pulses, as currently claimed. Since Luy does not teach all of the claim limitations, the rejection should be withdrawn.

35 U.S.C. §103

Claims 1, 2 and 23-25 are rejected under 35 U.S.C. §103(a) as unpatentable over US 5,242,718 ("Gillette") and Luy. Gillette's apparatus has a gas source (146 into 148) that enters the fluidizing portion in the plenum. That source may be equipped with a valve, as noted by the examiner. However, Gillette merely states that "The air supply 146 will in addition be connected to the nozzles 120, and suitable valves and other control devices will of course be operatively interposed, as appropriate." (See column 5, lines 42-45) Gillette does not disclose a valve connected to a controller capable of effecting actuation between opened and closed positions in an automatically self-cycling manner to provide cyclical gas pulses, as currently claimed. Thus Gillette suffers from at least this same deficiency as Luy. Accordingly, the combination of Luy and Gillette does not teach all of the claim limitations, and the rejection should be withdrawn.

Claims 2, 3, 6, 8-14 and 23-25 are rejected under 35 U.S.C. §103(a) as unpatentable over Gillette and Luy, and further in view of US 3,918,401 (Blakeslee). Blakeslee does not disclose a fluidized bed coater, but rather an apparatus to spray coat an article. The apparatus uses a split gas supply – one portion (15 and 19) fluidizes a powder feed, and a second portion (17 and 21) aspirates the fluidized powder through a nozzle (9) and onto an article. (See column 3, lines 33-38) There is no plenum into which both the first and second portion of gas flow, as currently claimed. Nor does the apparatus comprise a valve connected to a controller capable of effecting actuation between opened and closed conditions in an automatically self-cycling manner, as also claimed. Regarding this latter point, Applicant notes that the timer shown in Blakeslee's Figure 1 does not produce an automatically self-cycling valve actuation. Rather, the timer is connected to a turret of a container indexing unit via proximity sensor 4. (See column 3 lines 5-8) A container is indexed to the orifice of the spray chamber and positioned so that the bottom end may be coated. The proximity sensor and timer trigger the solenoid valves and air regulators to inject air to fluidize the powder feed (15 and 19) and to operate the aspirator (17 and 21). (See column 5, lines 50-55) Thus, the timer is driven by a sensor that detects the presence of a container targeted for spraying, and is not a part of a controller capable of effecting actuation of a valve between opened and closed conditions in an automatically self-cycling manner as currently claimed.

Thus Blakeslee does not cure the deficiency of Luy and Gillette with respect to controller capable of automatic valve self-cycling, and not all of the claim elements are taught. A *prima facie* case of obviousness has not been presented, and the rejection should be withdrawn.

Claims 4, 5, 17 and 18 are rejected under 35 U.S.C. §103(a) as unpatentable over Gillette, Luy and Blakeslee, and further in view of US 3,888,423 ("Ganiaris"). Ganiaris discloses a spray nozzle for use in a fluidized bed apparatus. The device employs a single gas flow to a plenum, but there is no provision for pulsing the gas or in fact even a valve. Therefore, Ganiaris does not disclose a valve connected to a controller capable of effecting actuation between opened and closed positions in an automatically self-cycling manner to provide cyclical gas pulses, as currently claimed. Thus a *prima facie* case of obviousness has not been presented.

Claims 7, 15 and 16 are rejected under 35 U.S.C. §103(a) as unpatentable over Gillette, Luy and Blakeslee, and further in view of 5,454,256 ("Gimben"). Gimben is directed to a method of controlling a powder spray coating system that overcomes various prior art problems, including caking of the powder due to moisture in the supply air. Gimben's method involves monitoring air humidity and controlling powder handling conditions in response thereto

to prevent moisture condensation. Gimben does not disclose a valve connected to a controller capable of effecting actuation between opened and closed positions in an automatically self-cycling manner to provide cyclical gas pulses, as currently claimed. Thus a *prima facie* case of obviousness has not been presented.

Conclusion

In view of the above, Applicant submits that the reasons for rejection have been overcome, and the claims should be allowed. Accordingly, reconsideration and allowance are requested. Applicant invites the Examiner to contact his undersigned representative, Frank Tise, if it appears that such contact may expedite examination of this application.

Respectfully submitted,

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Gayle D. Bay

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